City of Asheville
Stormwater and Erosion Control Ordinance Revisions

Asheville Planning and Zoning Commission

June 6, 2007

EPA's Federal Stormwater Regulations
NPDES Phase II

NPDES Phase II Requirements:

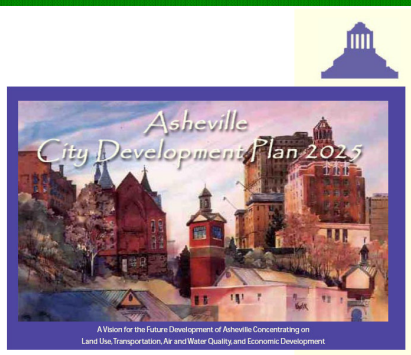
The City of Asheville must revise its Stormwater and Erosion Control Ordinances and adopt an Illicit Discharge Ordinance by July 1, 2007, to comply with federal and state regulations.

NPDES Phase II Goals:

To Improve Water Quality by Reducing Amount of Pollution that is Transported to our Streams by Stormwater RunOff

2025 City Development Plan: Water Quality Goals

- Goal I. Continue to coordinate with and support efforts by RiverLink, Land of Sky Regional Council, and state and federal agencies to improve water quality.
- Goal II. Implement stormwater management practices mandated by federal laws in an effective and timely fashion.
- Goal III. Develop and use best management practices to address the effect of development on stormwater runoff and water quality.



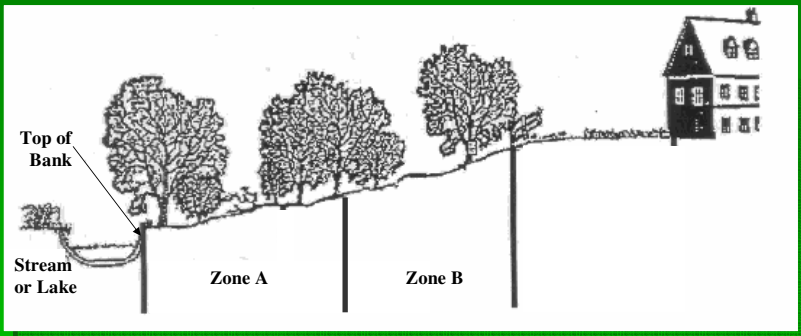
Ordinance Revision and Development Approach

- City staff teamed with consultants to research and analyze concepts from State's Minimum Model Ordinance, Other Communities' Ordinances and Existing City Ordinances, as a baseline for comparisons.
- The staff and consultant team qualified each concept by using goals from the City's 2025 plan and a working knowledge of development issues in Asheville's mountainous terrain.
- The team compiled 13 decision elements that were not adequately addressed in the State's minimum requirements or the City's current ordinances. These items are critical for future protection of public safety, quality of life, environmental resources and sustainable development.

Ordinance Revision and Development Approach

- A stakeholders group, the Watershed Policy Committee, was formed to review each of the 13 critical decision elements and make recommendations.
- Many members were invited to participate in this process; however, due to scheduling conflicts not all members were able to attend. The active group consisted of the following people:
  - Barber Melton - Coalition of Asheville Neighborhoods
  - Bruce Tompkins, Co-chair - Biltmore Village
  - David Herbert – Kenilworth Community
  - Hartwell Carson - RiverLink
  - Jeff Slosman, Co-chair - Manufacturers Association
  - Jeff Van Hartesveldt - Crowfields Condominiums
  - John Broadbrooks - Landscape Architect
  - Mike Goodson - Buncombe County
  - Starr Silvis – Division of Water Quality

Stakeholder Decision Elements Item 1 – Aquatic Buffers



Stakeholder Recommendations:

- Zone A – No land disturbance or impervious surface allowed, unless hardship is proven.
- Zone B – Allow pedestrian and non-motorized vehicle paths and trails, utilities and maximum of a 10% encroachment for all other construction. Land disturbance within Zone B is limited to the construction of the allowances.

Stakeholder Decision Elements
Item 1 – Aquatic Buffers

Stakeholder Recommendations:

- For redevelopment, requirements for aquatic buffers must be met only if project qualifies as a substantial improvement. For projects qualifying as substantial improvements, if the required aquatic buffer has been encroached and/or disturbed, it must be re-established.

- For redevelopment projects that do not qualify as a substantial improvement - staff shall research and determine if incentives for re-establishing aquatic buffers, such as credits for stormwater utility fees, can be applied. However, the scope of this process is outside this ordinance revision.

Stakeholder Decision Elements
Item 1 – Aquatic Buffers

- Zone A – No land disturbance or impervious surface allowed, unless hardship is proven.
- Zone B – Allow pedestrian and non-motorized vehicle paths and trails, utilities and maximum of a 10% encroachment for all other construction. Land disturbance within Zone B is limited to the construction of the allowances.

Minimum Aquatic Buffer Width Recommended Options

	Split Vote by Watershed Policy Committee Recommended by Flood Damage Reduction Task Force	Split Vote by Watershed Policy Committee Recommended by Staff	Split Vote by Watershed Policy Committee
Major Streams (French Broad and Swannanoa)	Zone A - 30' or as determined by State guidelines if greater than 30'	Zone A - 30' or as determined by State guidelines if greater than 30'	Zone A - 30' or as determined by State guidelines if greater than 30'
	Zone B - 70'	Zone B - 20'	Zone B - 20'
Primary Streams (All non-Major Streams which are FEMA regulated streams)	Zone A - 30' or as determined by State guidelines if greater than 30'	Zone A - 30' or as determined by State guidelines if greater than 30'	Zone A - 30' or as determined by State guidelines if greater than 30'
	Zone B - 20'	Zone B - 20'	Zone B - No Zone B
Secondary Streams & Lakes (All Lakes and all other jurisdictional waters not regulated by FEMA)	Zone A - 30' or as determined by State guidelines if greater than 30'	Zone A - 30' or as determined by State guidelines if greater than 30'	Zone A - 30' or as determined by State guidelines if greater than 30'
	Zone B - No Zone B	Zone B - 20'	Zone B - No Zone B
Division of Land Quality guidelines for Buffers based on natural slope from top of bank through buffer zone for Zone A, No Zone B	% Natural Average Slope From Top of Bank Through Buffer = 0 - 1 % Minimum Buffer Width = 15'		
	% Natural Average Slope From Top of Bank Through Buffer =1-3 % Minimum Buffer Width = 15'		
	% Natural Average Slope From Top of Bank Through Buffer = 3-5 % Minimum Buffer Width = 20'		
	Natural Average Slope From Top of Bank Through Buffer Greater than 5 % Minimum Buffer Width = 25 Feet + (%slope – 5)		
Division of Water Quality requirement	Minimum 30' Buffer with no Built Upon Area (impervious or semi-impervious area)		

Stakeholder Decision Elements
Item 2 – Constructed Slopes

Stakeholder Recommendations:

Definitions

- Define constructed severe slopes as a constructed slope with a grade of 50% (2:1) or greater.
- Define constructed moderate slopes as a constructed slope with a grade of 25% (4:1) but less than 50%.

Ground Cover for slopes

- Sufficient ground cover must be provided within 14 calendar days of completion of constructed severe and moderate slopes.

Stakeholder Decision Elements
Item 2 – Constructed Slopes

Stakeholder Recommendations:

Certification of Slopes

- Require design, inspection and stability certificate by NC registered professional engineer with geotechnical expertise for constructed severe slopes greater than 8' in height. Stability certificates shall verify slope's compaction and ability to maintain soil and vegetation.

- Require that NC registered professional engineer with geotechnical expertise provide periodic inspections and compaction reports for all constructed severe slopes within existing or future public right-of-ways.

Stakeholder Decision Elements
Item 2 – Constructed Slopes

Stakeholder Recommendations:

Slope Setback Requirements

- Require setback from existing adjacent property and right-of-way lines for retaining walls and constructed moderate and severe slopes as indicated below. The constructed moderate and severe slopes shall include those created for the construction of retaining walls. The setback shall be measured from and applied for both the head and the toe of the slope.
- For slopes with a maximum height of 5' or less the setback shall be equal to the maximum height of the slope.
- For all other slopes the minimum setback shall be the greater of either 5' or the maximum height of the slope minus the slope's horizontal ratio component multiplied by the maximum height of the slope.

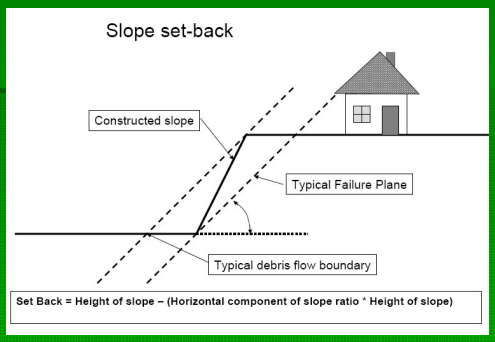
Stakeholder Decision Elements
Item 2 – Constructed Slopes

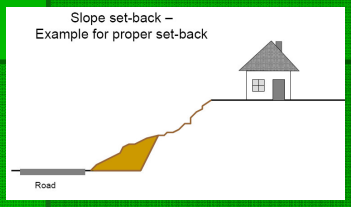
Stakeholder Recommendations:

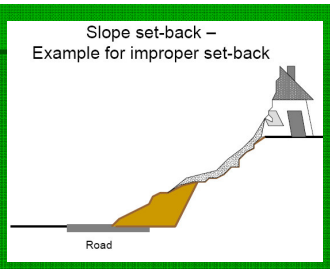
Slope Setback Exemptions

- On properties where the required slope setback will present a hardship, the required setback may be reduced if a subsurface exploration analysis of the area is completed by a NC registered professional engineer with geotechnical expertise and the analysis indicates that the reduction in the setback will not cause greater risk of damage to adjacent public and private properties.

Stakeholder Decision Elements
Item 2 – Constructed Slopes







Stakeholder Decision Elements
Item 3 – Requirements for Land Disturbances Allowances

Stakeholder Recommendations:

Security for Re-Vegetation

- For all property, disturbance limits may exceed 1 acre only if construction bond or letter of credit is provided. Bond shall be sufficient to re-vegetate proposed disturbed area and must be valid for 1 year from the issuance of the permit and if land disturbing activity exceeds one year in time, the bond or letter of credit must be updated.

Maximum Limits of Disturbance at one time

- Require grading on any property with 15% or greater natural average slope to be limited to disturbing 5 acres or less at a time.
- For a development, an increase in the limits of disturbance allowed at one time may be granted by the Stormwater Administrator if it can be demonstrated that public benefit is provided.

Stakeholder Decision Elements
Item 3 – Requirements for Land Disturbances Allowances

Stakeholder Recommendations:

Requirements for Developments that Have Total Allowable Disturbance Restrictions.

- Prior to final inspection approval for any phase of grading for developments with restrictions on total amount of disturbance, require "stamped" as-built drawings of disturbed areas to verify compliance.
- Require deed restrictions for allowable disturbance areas within hillside and ridge top subdivisions.

Stakeholder Decision Elements
Item 4 – Ground Cover

Stakeholder Recommendations:

- Sufficient permanent or temporary ground cover must be provided within 14 calendar days of completion of approved construction activity.

Stakeholder Decision Elements
Item 5 – Borrow and Waste Areas

Stakeholder Recommendations:

- Require borrow / waste calculations for all developments with 10,000 S.F. or greater land disturbance and require proof of approved borrow / waste site prior to issuance of permit, if site is not excluded by mining or landfill act.

Stakeholder Decision Elements
Item 6 – Design Storms for Erosion Control

Stakeholder Recommendations:

- Require erosion control measures to be designed for 10-year storm event as per existing ordinance with allowance for staff to require Erosion Control Measures for sites or specific measures on a site to be designed for 25-year storm if deemed necessary due to critical downstream areas, areas identified within watershed master plans and time of year of construction.

Stakeholder Decision Elements
Item 7 – Application and Exemptions for Stormwater Management

Stakeholder Recommendations:

- Require application of the stormwater management ordinance to development and redevelopment that: Cumulatively disturbs one acre or more;

And / Or

- Will have 50% or more total impervious surface on a parcel, independent of disturbance amount, excluding 1-2 family home structures.
- For redevelopment only the addition of impervious and/or built upon area shall comply with the stormwater ordinance.
- An exemption shall be granted for redevelopment with disturbance less than 1 acre, if reduction in impervious surface on the parcel is achieved.

Stakeholder Decision Elements
Item 8 – Post-Construction Stormwater Quantity Control

Stakeholder Recommendations:

Peak Flow Reduction

- Require PEAK FLOW control (retention) to pre-development rates for the 2-yr, 24-hr and the 10-yr, 24-hr storm and pass the 50-yr, 24-hr storm event, per existing ordinance.
- Allow stormwater administrator to require control to pre-development rates for the 25-yr, 24-hr storm, if by using existing watershed engineering analysis it is determined that downstream systems would fail due to the additional peak flows from the 25-yr, 24-hr storm event.

Stakeholder Decision Elements
Item 8 – Post-Construction Stormwater Quantity Control

Stakeholder Recommendations:

Volume Reduction

- Require VOLUME control: extended detention, 24-hr to 120-hr drawdown, for the 2-yr, 24-hr storm to protect downstream channels.
- Allow Stormwater Administrator to require volume control up to the 25-yr, 6-hr storm if by using existing watershed engineering analysis it is determined that downstream systems would fail due to the additional flows from the 25-yr, 6-hr storm event.

Stakeholder Decision Elements
Item 8 – Post-Construction Stormwater Quantity Control

Stakeholder Recommendations:

Exemptions

- Stormwater peak and volume control may not be required if the applicant can demonstrate through engineering analysis that the proposed development has no negative impact on downstream property, infrastructure and natural systems. The Stormwater Administrator will determine if requirements for stormwater peak and volume control are waived.

Stakeholder Decision Elements
Item 9 – Post-Construction Stormwater Quality Control for Low Density Development

Stakeholder Recommendations:

- Require same requirements as for High Density Developments.
- Provide incentives for low impact development projects with other tools.

Stakeholder Decision Elements
Item 10 – Post-Construction Stormwater Quality Control for High Density Development

Stakeholder Recommendations:

- Require structural stormwater systems for the control and treatment of the first 1" of rainfall on the developed site.
- Require a runoff volume drawdown 24 – 120 hours.
- Discharge the storage volume at a rate less than or equal to the pre-development rate.
- Require average annual TSS removal of 85%.

Stakeholder Decision Elements
Item 11 – Regional Stormwater Management Facilities

Stakeholder Recommendations:

- Do not allow provisions for development to provide fee in lieu of constructing on-site stormwater management systems for regional systems.

Stakeholder Decision Elements
Item 12 – Maintenance and Inspection Requirements

Stakeholder Recommendations:

Maintenance and Inspection for Erosion Control Requirements

- Require that for sites with 10,000 S.F. of disturbance or greater, a during construction contract with a licensed professional for erosion and sediment control plan compliance checks be in place prior to issuance of permits.

- Licensed professional shall perform weekly inspections and file reports for all sites regulated by steep slope standards and bi-weekly for all other sites.

Stakeholder Decision Elements
Item 12 – Maintenance and Inspection Requirements

Stakeholder Recommendations:

Maintenance and Inspection for Stormwater Compliance

- Require a during construction contract with person of equivalent licensure to that of designer for stormwater plan compliance, for sites requiring a stormwater drainage system, prior to issuance of permit.
- The licensed professional shall perform weekly inspections and file reports for all sites regulated by steep slope standards and bi-weekly for all other sites and must inspect all stormwater control systems as installed. Installation of all BMPs must be inspected.
- Require record drawings to be recorded and clearly identify all stormwater control systems, which must also be indicated on the inspection and maintenance agreement.
- Require that all stormwater control systems be located outside of public right-of-ways unless public benefit can be proven and Stormwater Administrator approves.

Stakeholder Decision Elements
Item 13 – Enforcement

Stakeholder Recommendations:

- Adopt Penalty Schedule

Enforcement Penalty Schedule

Erosion and Sediment Control										
	Grading without permit	Site/Plan not in accordance with approved plan	Failure to maintain erosion control measures	Offsite Sedimentation	Buffer zone violation	Graded slopes or fills not in compliance	Lack of ground cover	Improper fill material	Failure to file/ falsification of inspection report	Other Violations of Erosion and Sediment Laws
Immediate Fine	$100 per 2,000 SF disturbed max of $5,000 NOV Issued	NOV Issued	NOV Issued	Slight-$0 - $500 Moderate $501-$2000 Severe $2001 - $5000 NOV Issued	$100 per 5 SF disturbed, max of $5,000, NOV Issued	NOV Issued	NOV Issued	NOV Issued	$2000 for falsification of report	Possible $0-$5000
On Going Violation (Failure to Comply with NOV)	Per day penalty equal to or greater than immediate penalty	$500 per measure not installed correctly or $1000 per measure not installed, max of $5000 (every 100 L.F. of silt fence or diversion shall be counted as 1 measure)	$500 per measure not maintained correctly , max of $5000 (every 100 L.F. of silt fence or diversion shall be counted as 1 measure)	Per day penalty equal to or greater than immediate penalty	Per day penalty equal to or greater than immediate penalty	$100 per 100 SF not compliant max of $5,000	$100 per 100 SF not compliant max of $5,000	$0-$5000 (To be based on amount of improper fill and possible hazard for failure or leeching of pollutants)	$200 per reporting period for each report not filed	Possible $0-$5000
Willful Violations	A Willful violation shall be established for repeat offenses by same party or refusal to comply with Erosion Control Laws. Penalties for willful violations shall be maximum allowed and pursuit of criminal prosecution.									

Notes: Level of severity for off-site sedimentation shall be assessed by square footage of damaged area or man hours required to clean up sedimentation and shall be reviewed by the stormwater administrator. Following is a guideline for accessing severity of damage.
Slight: Area of damage up to 500 S.F. or approximately up to 4 man hours to correct with hand tools
Moderate: Area of damage greater than 500 S.F. and up to 5,000 S.F. or approximately greater than 4 man hours to correct with hand tools but less than 16 man hours to correct with hand tools.
Severe : Area of damage greater than 5,000 S.F. or approximately greater than 16 man hours to correct with hand tools
Impact to environmentally sensitive areas such as jurisdictional streams or wetlands shall be grounds for moving the severity assessment to the next highest level and other regulatory agencies shall be notified.

Stormwater and Illicit Discharges	
Maximum amount of fine shall be $25,000 per day per violation. Amounts for violations shall be based on severity of impacts to public/private property, natural environment and public welfare.	
Willful Violations	A Willful violation shall be established for repeat offenses by same party or refusal to comply with Erosion Control Laws. Penalties for willful Violations shall be maximum allowed and pursuit of criminal prosecution.